

OMC 8000

MENU

ENTERING MENU OF OMC8000

It is possible to enter the menu in two different ways:

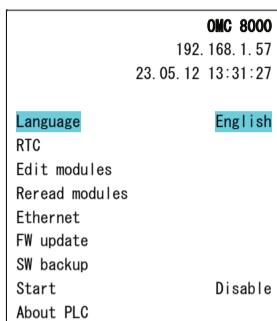
1. by pressing the **OK** key while the display shows the opening screen of connected modules and holding it down for the duration of this opening screen (approx. 3 seconds). The **OK** key can be pressed already at the point of start-up
2. By pressing simultaneously (for approx. 3 seconds) keys **UP** a **DOWN** (arrows up and down) provided the PLC program is not running (LED **RUN** is not lit). Item **Start** is allowed only in this start menu

LANGUAGE OF MENU

The device menu is in 4 languages: English, Czech, German and French

Setting of LANGUAGE

Setting of language is performed by pressing the **OK** key. Selected language option is displayed inversely – blue text on yellow background. Language can be changed by using the **UP/DOWN** keys. Pressing the **ESC** key ends editing and returns you to the original selection. The **OK** key confirms the selection



SUBMENU RTC

Transfer to lower level by pressing the **OK** key, return to higher level by pressing the **LEFT** key. Pressing the **ESC** key terminates browsing through the menu

Setting TIME

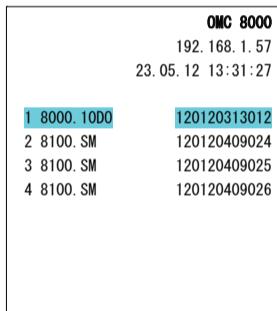
Pressing the **OK** button opens editing. Projection format is blue text on yellow background. Edited digit is on red background. Change of value is done by **UP/DOWN** keys, keys **LEFT/RIGHT** edit the number scale. **OK** confirms selection, **ESC** returns to higher level without any changes.

Setting DAY

Same procedure as with LANGUAGE. Selecting the day of the week.

Setting DATE

Same procedure as with RTC.



EDIT MODULES

This menu item allows assigning addresses to the connected modules. If no modules are connected, the screen is empty.

Changes made in this menu are irreversible.

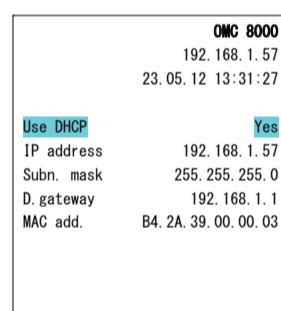
The desired module is selected using the **UP/DOWN** keys. LED **RUN** flashes on the selected module. By pressing the **OK** key the selected module is activated to be ranked into the list and it is displayed inversely on the display. By pressing the **UP/DOWN** keys the module is placed in the desired position.

By pressing the **OK** key again the module is deactivated.

ESC terminates the process.

SETTING OF REREAD MODULES

the list of modules and uploads it again. The rest of the procedure is identical as above.



SUBMENU ETHERNET

Options for network communication

Setting USE DHCP

Authorizes the use of DHCP server

Setting IP ADDRESS

Current IP address is shown. When editing is initialized, IP address which will be used is shown, provided HDCP server is not authorized.

Setting SUBN. MASK

Current subnet mask is shown. When editing is entered, subnet mask which will be used is shown, provided HDCP server is not authorized.

Setting D. GATEWAY

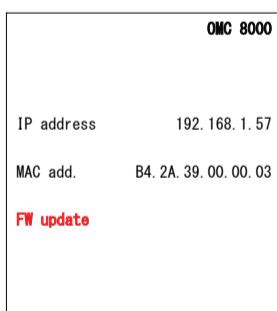
Current gateway is shown. When editing is entered, gateway mask which will be used is shown, provided HDCP server is not authorized.

Setting MAC Add.

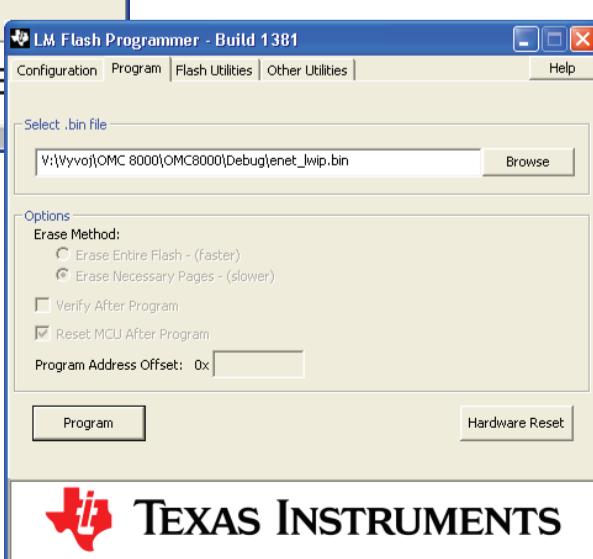
Current MAC address. This menu item cannot be changed.

Action FW UPDATE

After pressing the **OK** key the PLC will enter a mode in which it expects a FW update. It is possible to exit this action only by switching the PLC off. If the SW uploader is not run, the original FW remains unmodified.



Installation of the uploader FW is located in the installations' folder of Multiprog software in a subfolder Orbit_Merret – LMFlashProgrammer.msi.



It is necessary to enter the information given on the PLC screen and a path to the file containing the FW.



SUBMENU SW BACKUP

Options for backing up of user program on an SD card.

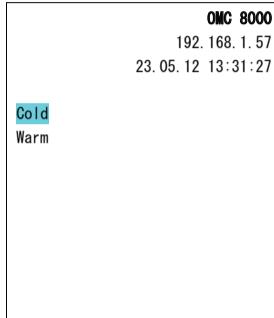
Action BACKUP

A backup.plc file is created in the root address book of the SD card. It is a binary image of a user application. Its content is identical with the content of a file which can be found in a file located in this path:

[projects folder]\[project name]\C\[configuration]\R\[source] \image.bin

Action RESTORE

Restores a stored image



SUBMENU START

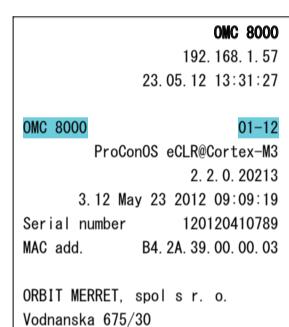
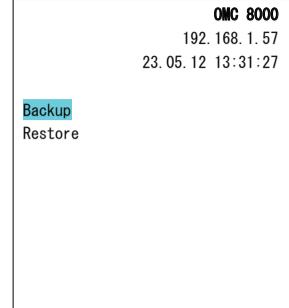
It allows running a user program after an error or restoration. Before this action is taken, we recommend checking communication with modules by running EDIT MODULES

Action COLD

Identically with controlling in MULTIPROG SW it executes the start of the program along with setting all the variables.

Action WARM

Identically with controlling in MULTIPROG SW it executes the start of the program along with setting of only non-retain variables.

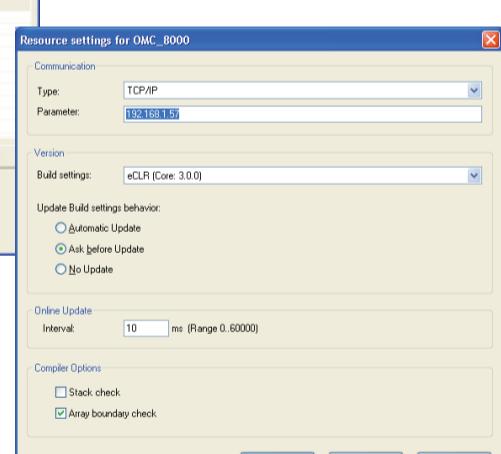
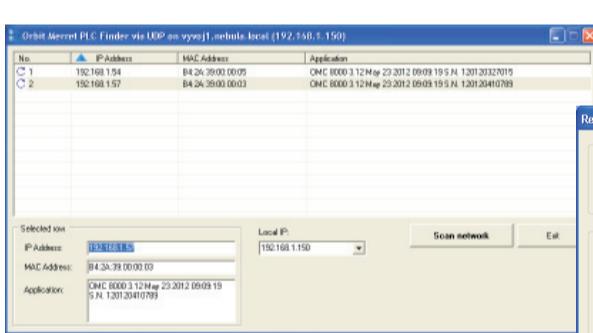


SUPPORT PROGRAMS FOR OMC 8000

Are located in the install file of the MULTIPROG SW in a subfolder Orbit_Merret

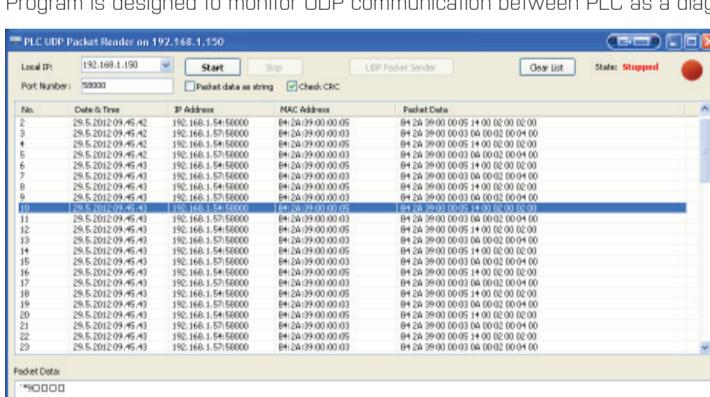
OM FINDER

Program OM Finder was created for an easier configuration of resources in the MULTIPROG SW. This SW can detect all OMC 8000 devices which are available in the network and it displays basic information. By clicking on the selected PLC using the DRAG & DROP method [CTRL+V and CTRL+V] the IP address can be transferred to setting of the source.



PLC READ PACKET

Program is designed to monitor UDP communication between PLC as a diagnostic tool

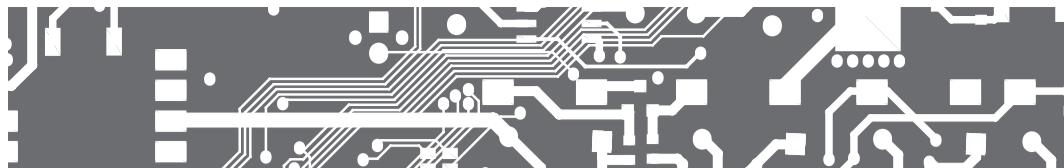


Packet Data: *000000

Idle

OMC 8000

IO DRIVER



OM_IO_DRIVER

OMC 8000	
192.168.1.57	
23.05.12 13:31:27	
1 8000.1000	120120313012
2 8100.SM	120120409024
3 8100.SM	120120409025
4 8100.SM	120120409026

IO driver for working with logical inputs and outputs. Values of counters, analogue inputs and other data retrieved by PLC are read by functions and function blocks. Input ports create one continuous range created automatically based on an assigned address and the module's properties.

OMC 8000 main module has 2 Bytes of logical inputs and one output:

Address %IX0.0 to %IX0.5 – universal inputs

Address %XI0 to %XI2 – inputs react to power supply voltage

Address %QX0.0 to %QX0.4 – outputs

Other Bytes here are not used. Other addresses in the system according to the configuration on the right would be:

Address %IX2.0 to %IX2.7 – inputs OMC 8000.1000

Address %IX3.0 to %IX3.2 – inputs A, B, C of module OMC8100.SM

Address %IX4.0 to %IX4.2 – inputs A, B, C of module OMC 8000.SM

Address %IX5.0 to %IX5.2 – inputs A, B, C of module OMC 8000.SM

Address %QX1.0 to %QX1.7 – first 8 outputs of OMC 8100.1000x

Address %QX2.0 to %QX2.1 – remaining 2 outputs of OMC 8100.1000x

Other addresses are not assigned. Distribution of inputs is described in the user manual, datasheet and the module's label. If some BOOL outputs are not used in the program, they can be configured according to the state of the inputs, for example %QX0.2 := %IX0.2

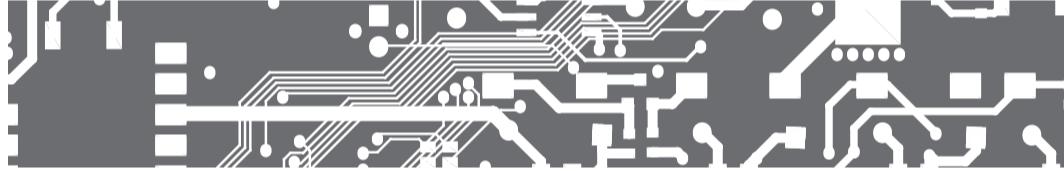
INITIALIZATION OF HW

Both the OMC 8000 main module and the expansion modules need to be configured first, required modes of input and output circuits are to be selected. Manufacturer's libraries contain several function blocks, which are described in the help section of libraries.

These configuration blocks are performed only once upon launch. This means it is not possible to dynamically change the HW configuration while the program is running. So as not to keep the main program busy by executing these configuration blocks, a special system task called Start Task was created. This task is launched once during any start of application, whether it is cold, warm, or hot start.

OMC 8000

INSTRUMENT CONNECTION / TECHNICAL DATA



MEASURING INPUTS

ANALOGUE	
Number of inputs	6
Range	0...60/450 mV 0...2.8/10/20/30 V 0/...20 mA 0...390/3900 Ω Pt 100 Pt 1 000/Ni 1 000 PNP/NPN/contact [0.5/500 kHz] IRC [500 kHz], [2x]
Resolution	12 bits
Accuracy	±0.2 % of range ±0.5 % of range - for Pt xxx/0 [only input 1.4 and 1.5]
Rate	500 meas./s
Overload capacity	10x
LED signalisation	yes
Number of inputs	3
Range	12...30 V AC/DC nebo 80...250 V AC/DC [the range is always identical with the device's power supply]
Max. current	2.5 mA
Response time	20 ms
LED signalisation	yes

DATA OUTPUTS

Protocols	ASCII
Data format	8 bit + no parity + 1 stop bit
Rychlost	600...230 400 Baud
RS 485	isolated, addressing [max. 31 instruments]

ANALOGUE OUTPUTS

Type	isolated, programmable with 12 bits D/A convertor
Non-linearity	0,1 % of range
TC	15 ppm/°C
Rate	response to change of value < 1 ms
Output	0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA [comp. < 500 mV/2 V]
Ripple	5 mV residual ripple at output voltage of 10 V

If analogue output is present, the number of relays/open collectors is reduced down to 3 units.

POWER SUPPLY

	10...30 VDC/24 VAC, ±10 %, 5 VA, PF ≥ 0.4, 80...250 VDC/VAC, ±10 %, 5 VA, PF ≥ 0.4, I _{UPS} < 40 A/1 ms, isolated
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MECHANIC PROPERTIES

Material	PA 66, incombustible UL 94 V-0, blue
Dimensions	72 x 91 x 60 mm
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector, conductor cross-section <2,5 mm ²
Stabilisation period	within 15 minutes after switch-on
Working temperature	-20°...60°C
Storage temperature	-20°...85°C
Cover	IP40
Provedení	safety class I
Electric safety	EN 61010-1, A2

Dielectric strength	4 kVAC after 1 min between supply and input 4 kVAC after 1 min between supply and output 4 kVAC after 1 min between supply and data/anal. output 4 kVAC after 1 min between supply and comparators 2.5 kVAC after 1 min between input and data/anal. output
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Insulation resistance	for pollution degree II, measurement cat. III 300 V (Pi), 150 (Di)
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EMC	EN 61261 [Industrial environment]
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Programming	EN 61131-3
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* Pi - Primary insulation, Di - Double insulation

The instrument supply leads should not be in proximity of the incoming low-potential signals. Contactors, motors with larger input power should not be in proximity of the instrument.

The leads into the instrument input [measured quantity] should be in sufficient distance from all power leads and appliances. The instruments are tested in compliance with standards for use in industrial area, yet we recommend to abide by the above mentioned principles.

In order to guarantee the technical parameters of the device it is essential to connect shielding of signal wires to the switch board frame!

ANALOGUE INPUTS

UNI.A	RANGE	CONNECTION
	0...60/450 mV 0...2.8/10/20/30 V 0/...20 mA 0...390/3900 Ω Pt 100 Pt 1 000/Ni 1 000 PNP/NPN/contact [0.5/500 kHz] IRC [500 kHz], [2x]	terminals [GND + No. 7...9/11..13]

DIGITAL INPUTS

D.I.L(H)	RANGE	CONNECTION
	12...30 V AC/DC or 80...250 V AC/DC	dry contact, terminals [N + No. 3/4/5]



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